The application is published incomplete as filed (Article 93 (2) EPC). The point in the description at which the omission obviously occurs has been left blank.

A request for correction (addition of one page of the description) has been filed pursuant to Rule 88 EPC. A decision on the request will be taken during the proceedings before the Examining Division (Guidelines for Examination in the EPO, A-V, 3.).

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(54) **User interface for defining and automatically transmitting data according to preferred communication channels.**

(57) A user interface to automatically distribute information to a receiver on a network (2) using devices (4,5,11,13), such as printers (11) and facsimile machines (13), and communication channels (62 ; Fig.2), such as electronic mail, defined in a receiver profile (150 ; Fig.4). The receiver profile establishes the properties and mode for receipt of information for receivers on the network (2) and the profile is published in a network repository (105 ; Fig.3) for all network users or is accessible by selected groups or individuals on the network. Receivers have additional control over network senders by defining an information filter (62 ; Fig.2) which further controls sender channel access (to a receiver) by defining some channels (62) as having priority of access such as direct or delayed access, as well as selectively permitting senders to override the receiver profile (150 ; Fig.4). Consequently, receiver profiles (150 ; Fig.4) provide a variable receiver definable link to senders using multiple forms of media as well as multiple hardwar platforms and network configurations.

FIG. 1
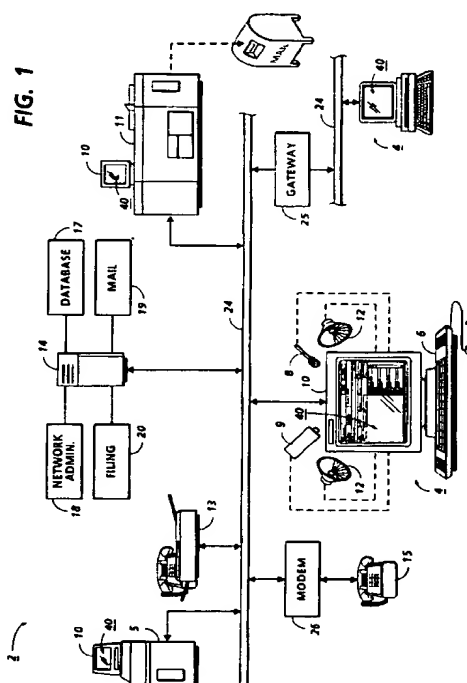
EP 0 646 857 A1

The present invention relates to a user interface for improving communication between devices or stations on a network. More specifically, the invention relates to a user interface having the option to define communication channels or virtual links between individual users or groups of users on the network and the capability to automatically send data to receivers based upon predetermined receiver defined communication channels.

As networks and systems become more integrated and more complex, the amount and speed of information flow between users creates a need for more versatile and more efficient control over the information flow process. Current systems do not enable receivers of information to define how they prefer their information received. Typically a sender controls the form information should take, forcing the receiver to accept information in the form defined by the sender.

Protocols defining integrated system behavior for devices such as printers, scanners, workstations and facsimiles, are well known. These protocols define how the systems should integrate across networks. Op rational transparency across networks and devic platforms, provide users with an increasingly in t grated and transparent system environment. In this environment the manipulation of information (such as documents) is transparent to users as a result of the various network protocols that define the manner in which devices manipulate information. For example, "Office Systems Technology" Xerox Corporation, Palo Alto, California, 1984, OSD-R8203, is an overview of the Xerox Corporation "8000" series products, which include workstations, services, ethernet and software development. The "8000" series products ar integrated using Ethernet and the Xerox Network Systems Communication Protocols which include: In t lnet Transport Protocols: Xerox System Integration Standard, Xerox Corp., Stamford, Conn., December 1981, XSIS-028112; Courier: The Remote Procedure Call Protocol, Xerox System Integration Standard, X rox Corp., Stamford, Conn., December 1981, XSIS-038112; Clearinghouse Protocol, Xerox Corp., Stamford, Conn., April 1984, XSIS-078404; Authentication Protocol, Xerox Corp., Stamford, Conn., April 1984, XSIS-098404; Filing Protocol, Xerox Corp., Stamford, Conn., May 1986, XNSS-108605. Another example of an integrated system is the ISDN telephone network that provides services such as fax mail boxes and voice mail boxes.

Printers (and printer controllers or servers) are also sometimes referred to as "shared resources" in a networked environment. The server typically functions as a "spooler" to buffer the jobs that are sent to it, as well as a page description language (PDL) "decomposer", for converting the PDL files (e.g., "Interpress"" or "PostScript"®) to bitmapped files for application to the printer. Also of interest is Pennant Systems Co., Print Services Facility/2 (PFS/2), server-based software intended to act as a universal translator between various network protocols (LAN, TCP/IP and SNA) and printer document protocols (PCL and Postscript).

Another example of an established commercial integral system, with a shared printer and system server, comprises the Xerox Corporation "VP Local Laser Printing" software application package, which, together with the Xerox "4045" (or other) Laser Copier/Printer (CP), the "6085" "Professional Computer System" using Xerox Corporation "ViewPoint" or "GlobalView®" software and a "local printer [print service] Option" kit, comprises the "Documenter" system.

Different workstations can access print services in different ways. To print a document, desirably the user can simply "copy or "move" the document, with a mouse click or other command, to a printer icon on the workstation desktop, and set the displayed printing options, as on Xerox Corporation workstations. From other workstations such as the IBM PC's, the user may need to select menu items or type in commands to obtain access. The workstation selectable print options can include the number of copies, selected pages to be printed, paper size, image orientation, a choice of printers, and phone numbers when sending to a facsimile device. In addition, the option sheet allows the user to specify whether to delete the "Interpress™" or other master, or retain it at the workstation desktop. Already print-formatted or master documents may be transmitted to the printer directly, eliminating the need to repeat the conversion or decomposition process if another copy of the document is desired. If saved, an "Interpress™" master can be stored at the file service or even mailed to one or more individuals via an electronic mail service. Utilizing an inter-network routing service, users can transmit "Interpress™" or other printing masters through a network and then across an intelnet, typically, via telephone lines, twisted pair wires, coaxial cables, microwaves, infrared, and/or other data links, allowing documents created in one location to be automatically routed to a print service and printer hundreds or even thousands of miles away, in seconds or minutes.

The recently announced Xerox Corporation developed "PaperWorks"™ product utilizes a special encoded fine pattern of special marks ("glyphs"), electronically recognized as such using PC computer software by the facsimile electronic image receiver. It was initially configured to operate on a conventional personal computer having a conventional internal fax card and a modem, electronic mail system or other network connection to telecommunications, and running "Windows"™ software. A "PaperWorks"™ fax form carries a coded identification region which, upon scanning, may be decoded by an appropriate processing system. This coded identification allows the

system to determine which of several different pre-stored forms the received form is, and what its page layout is. From this, the system can also extract the necessary user-entered information from the form to facilitate processing. An important feature of the "Pa-perWorks"™ system is the use of data defining a control sheet image to provide information in accordance with which operations are performed on data defining a sequence of images [data defining images, not actual physical sheets of a medium]. For example, the control sheet image present invention will become apparent as the following description proceeds, and the features characterizing the invention will be pointed out with particularity in the claims annexed to and forming a part of this specification.

The present invention provides an electronic workstation adapted for interconnection to a number of predetermined devices, the workstation having a user interface for operating the workstation and providing access to a communication channel profile defining a priority scheme for transmitting data to said predetermined devices, the user interface comprising:

a screen display adapted for displaying icons and menu options, predetermined icons identifying data files,

a graphic pointer electrically connected to the scr en display for selecting icons and menu options,

means to identify a given data file on the screen display by the graphic pointer,

means to specify a destination for said given data file, and

means to access said communication channel profile for transmitting said given data file to a given device in response to said priority scheme.

The present invention provides a user interface to automatically distribute information to a receiver on a network using devices (such as printers and facsimile machines) and communication channels (such as electronic mail) defined in a receiver profile. The receiver profile establishes the properties and mode for r ceipt of information for receivers on the network and the profile is published in a network repository for all network users or is accessible by selected groups or individuals on the network. Receivers have additional control over network senders by defining an information filter which further controls sender channel access (to a receiver) by defining some channels as having priority of access such as direct or delayed access, as well as selectively permitting senders to override the receiver profile. Consequently, receiver profiles provide a variable receiver definable link to senders using multiple forms of media as well as multiple hardware platforms and network configurations.

The present invention further provides a user interface according to claim 4 of the appended claims.

Preferably the remote address profile is a predetermined priority scheme stored in memory. The user interface preferably includes means for altering the priority scheme for given remote address profiles.

The invention further provides a user interface according to claim 6 of the appended claims.

The invention further provides a method of operating an interface, according to claim 7 of the appended claims.

The method preferably includes the step of maintaining the user profiles defining priority schemes for said users in a network profile memory. Preferably the network includes a plurality of communication channels and the step of sending the data object to the given user in response to the user profile of the given user includes the step of designating a set of said plurality of communication channels.

The invention further provides a method of sending information, according to claim 8 of the appended claims.

Preferably, the channel profile defines a second preference of data receipt including the step of sending said information to the given receiver over the second communication channel in response to the second preference of data receipt. Preferably, the first communication channel is unavailable. The method preferably includes the step of altering the communication channel profile of said given receiver at the user interface. Preferably, the channel profile defines a second preference of data receipt including the step of automatically sending said information to the given receiver over the second communication channel in response to the failure of said first communication channel.

Preferably, there is a plurality of sources of information and wherein said preferences of data receipt for receivers over the network is a function of the source of the information to be sent.

The invention further provides a user interface according to claim 9 of the appended claims.

Preferably, the communication channel profile is a function of the type of information to be communicated to a given receiver. The user interface preferably includes a network repository and wherein the communication channel profile is stored in said network repository. Preferably, the network repository is accessible from the user interface.

The invention further provides a user interface according to claim 10 of the appended claims.

The user interface preferably includes a window for displaying the progress of the transmitting of the data file to said one of the selected users. The user interface preferably includes the means to access the identifier for a selected user, the means to access including a window specifying the preferred mode of receipt of a data file by said selected user. Preferably, the window specifies preferred devices for receipt of a data file. Preferably, the window specifies a priority of devices for receipt of a data file.

The preferred devices for receipt of a data file

preferably include at least one from a set of printer, facsimile, and electronic mail devices.

The user interface preferably includes means for a user to set a preferred mode of receipt of a data file. Preferably, the means for a user to set a preferred mode of receipt of a data file includes a displayed window for selecting predetermined devices. The user interface preferably includes means for a user to bar alteration of the preferred mode of receipt of a data file, and/or means for a user to allow alteration of the preferred mode of receipt of a data file.

For a better understanding of the present invention, reference may be had to the accompanying drawings wherein the same reference numerals have been applied to like parts and wherein:

Figure 1 is an illustration of a system environment incorporating the present invention;

Figure 2 is an enlarged view of the multi-device user interface used on the display screens shown in Figure 1, and which embody communication channels of the present invention.

Figure 3 shows a schematic view of the system architecture used in the system environment of Figure 1;

Figure 4 shows a simulated screen image of a communication channel being published;

Figure 5 shows a simulated screen image of a property of a communication channel being modified;

Figure 6 is a flow chart showing the general steps involved with publishing a communication channel;

Figure 7 shows a simulated screen image of receiver setable communication channel profiles;

Figure 8 shows a simulated screen image of the access properties of a communication channel;

Figure 9 shows a simulated screen image of information being sent using a communication channel;

Figure 10 shows a simulated screen image of the status of the information being sent in Figure 9; and

Figure 11 shows a simulated screen image of a communication channel of a receiver being optimized by a sender.

In the description herein the term "document" refers to either a single page or multiple pages that can be represented either as hard copy or in some intermediate electronically stored format for later rendering to a human understandable form such as hard copy or video display A "job" refer to one or more documents or sets of documents being sent to or received by a particular addressee or designee. Additionally, the term "multimedia" is defined herein as documents that relay information using audio and/or video, where video includes documents in the form of text, graphics and/or images.

"Multimedia" can also encompass any informa-tion such as "electronic mail", "facsimile", "voice-mail" or any other media transferable through network having interconnected printers, scanners, facsimile devices or file servers. Multimedia can be encoded in a plurality of formats (i.e, glyphs, page description languages, ASCII, bar code, etc.) in order to optimize the quantity of data required for storage and transmission efficiency as well as the speed with which the media is rendered to users (e.g., electronic images displayed or printed). Plural mode or "multi-function" systems or "devices" combine printing, scanning, editing, facsimile and message receiver printing capability, where one such capability is defined as a "service". The term "printer" encompasses hard copy output from various input sources, including facsimile, scanners, keyboard entry, and electronic document images input.

The term "electronic mail" (email) also has various broad meanings, and can include multimedia transmission by either external telephone lines, and/or shared internal networks using optical fiber, twisted wire pairs, coaxial cable, wireless transmissions, or other networking media, or combinations thereof, of documents for electronic remote terminal displays and/or printer hardcopy printouts, to any of the numerous addresses designated by the sender.

Referring now to the drawings and in particular to Figure 1, an exemplary multimedia device information system or network 2 including work station 4 enables users to communicate in a transparent and device independent manner. Multimedia system 2 can be implemented using a variety of hardware platforms and includes devices for input including scanner or digital copier 5, keyboard 6, pointing device or mouse 7, microphone 8, and video camera 9. The system further has devices for output including display terminal 10, printer 11, and speakers 12. Input/output (I/O) devices include facsimile 13, file server 14, and telephone 15. Server 14 is configured central to or remote from work station 4 with public, shared and/or private data storage that is differentiated by user access rights. The server 14 includes relational database system 17, network administration system 18, mail system 19 (e.g. email, voice mail) and data storage and retrieval system 20, and can be physically configured using optical drives, hard drives, floppy drives and/or tape drives. The relational database system 17 provides systems with fast query and retrieval of data.

Work station 4 operates in a collaborative environment, where users at different Work stations 4 can work together in real time to process and distribute public, shared or private information existing in different forms. (Public data is defined herein as data accessible by anyone, shared data is defined as data accessible by a limited number of users and private data is data uniquely accessible by a single user.) Work station 4 can exist in a distributed or centralized

environment. In either environment Work station 4 is connected to other systems and devices through local area network (LAN) 24, gateway 25, and/or modem 26. In distributed systems, a number of Work stations extend distributed processing and storage capabilities to each other, by providing for example redundant storage or a single mounting of a unique application. Work station 4 includes an object oriented user interface (UI) 40 that uses icons and windows to represent various data objects and user applications such as a display illustrating an office desktop metaphor employing various abstractions of a typical office environment. User interfaces using windows and icons having an object oriented methodology to present metaphors for maintaining data, navigating through various user spaces and presenting abstract computer concepts are well known, an example of which is Globalview TM ("GV") software available from Xerox Corporation, which uses abstractions such as a desktop, inbasket, outbasket and documents.

Figure 2 shows an embodiment of a multi-function device user interface 40 which is displayed on scr ns 10 of Work station 4, printer 11 and scanner 5. Us r interface (UI) 40 can operate remotely from any system; it is extensible across network services using remote windowing protocols such as X windows ("X Window System", W. Scheifler and James Gettys, Digital Equipment Corporation, U.S., 1992, ISBN 1-55558-088-2). For example, the user interface 40 on printer s 11 is available remotely from any Work station 4 or alternate service such as scanner 5. Specifically, the user interface 40 is divided into three regions; resource bar 42, status bar 43, and service area 44. Resource bar 42 is a menu bar that provides us rs access to high level services that are integrated on n twork 24. Within the resource bar document source or suitcase 45 provides the user with a temporary storage space for documents. Suitcase 45 stores activ and editable documents for easy movement across network services, or it is a transitional space where documents are stored while a user navigates through network 24.

Further, provided on resource bar 42 is network services menu 46 and network administration menu 47. Network services menu 46 provides access to any networked service such as printer 11, facsimile 13, scanner 5, file server 20 (private, shared and public file storage), database server 17, mail servers (e.g. voice mail, email, etc.) 19, ports (such as modem 26, network gateway 25), and other Work stations 4. Also, available in services area 44 are published communications channels 63 available from network admin 18. These are channels that have been provided to a utility (not shown) that manages network administration 18. These channels included in a user profile are provided by a user who is to receive data from other users on network 24. Other utilities available in network admin 18 are distribution lists, service access lists and other domain and area network services. Network administration 47 provides users with access to utilities for identification and location of profiles and services. For example, network administration 47 includes information concerning user access privileges as well as resource privileges to file server access.

Status bar 43 is divided into three dedicated message areas, system message area 48, device message area 49, programming conflicts message and prompt area 50. Text is updated in the message area 50 as system status changes. The message area 50 can be selected to reveal more detailed messages. For example, when a printer is down, the message area gives a "Printer Down" message; further selection of the message area 50 provides more detail of causes for the printer to be down. Service area 44 groups and holds related services and features as well as provides user work space 51. A selected device is identified on herald menu 52, that is, cording on menu 52 provides utilities available to the device name 53. For example, device 53 could be a network publishing system with scanning, printing or faxing facilities. Device 54 would be the physical network publisher exporting the services. Service bar 55 groups services available on service 53. For example, a user could select a service module to access a specific document service (e.g. scan 56 or send 57). Service sub bar 58 provides access to sub-services within service modules. Workspace 51 provides a user area for preparing documents for distribution, which can include publication and archival.

In particular, the send service 57, which is a service displayed on service bar 55, is selected and opened on user interface 40 as shown in Figure 2. As shown in Figure 2, the send service 57 has sub service bar 58, with sub-services, quick-send 59 and distribution lists 60. The send service 57 provides virtual links or communication channels to other users on network 24. Channels 62 are published to the network by a receiver in the form of a receiver profile to provide the receiver with the flexibility to define the mode (facsimile, hardcopy, email, voice mail, etc.) that the receiver's information should be received. In essence, the communication channels 62 are receiver setable information filters. A single communication channel 63 is identified using the user's name 64 as well as location 65 and illustrative identification 66 (e.g. a scanned-in picture, graphic, icon, etc.). Distribution list 60 is a sub-service that provides similar functionality as a quick-send sub-service except that distribution lists are communication channels that are directed to groups of individuals. It is a means for a user to build distinct distribution lists. Distribution list 60 sub-service provides either distribution lists published to the network or be created by individual users.

The channel architecture is based on a client-ser-

ver relationship, where client facilities are applications that are exported to the network 24, and server facilities are imported from the network. In other words, clients access exported server functionality. Thus, some services (printer, scanners, and the like) may only export or provide server functionality while using no client functionality. As a result, both the channel client and channel server may operate on the same service as well as uniquely on different services. The architecture is shown in detail in Figure 3, where an integrated client/server system 102 is operating with stand-alone client 104, server 103 and communication channel admin server 105 that provides network administrative facilities such as storing communication channel information on disk 106.

Common to both the client and server architecture is communication channel manager 110. Manager 110 interfaces user interface 111 with network 24, local storage disk 112 and cache 113, receiver service 114 and sender service 115. Listed in Appendix A is an example of an interface for manager 110 between user interface 111 and receiver and sender service 114 and 115. Local storage available to manager 110 is in the form of long-term storage 112 (e.g. disk, floppy or tape) and short-term fast access, or cache storage, 113. Receiver service 114 provides serv r functionality while sender service 115 provides client functionality to manager 110. Manager 110 establishes virtual links or communication channels 63 either directly to other servers such as server 103 or indirectly through admin server 105.

Communication channel control begins with the r ceiver defining the preferred form(s) that docum nts should take when received. The user activates profile 150, shown in Figure 4, by selecting display us r profile command (not shown) from the network administration menu 47. User profile 150 is completed by a user, for example Fred Smith, and published to network administration 105 using the publish command 151 or the profile herald bar 152. Publication to other network users defines the preferred form with which the publisher, namely Fred Smith, desires his information to be received. Profile properties 153 are a number of different profile categories, each category can be either checked, locked, or unselected. If a category is unselected, then a category is neither locked nor checked. A checked category such as fax category box 155 identifies facsimile as the users established default receive preference. For example, given Fred Smith checked the fax box, then all facsimile documents sent to him are routed to the fax at the identified phone number in the profile properties 153. In a similar manner, Fred Smith can set his preference for a particular page printer, color printer, or any other device to receive information. It should be noted that it is well within the scope of the present invention that multiple printers or devices can be listed or scrolled and the user or receiver can rank the de

vices or modes of communication in a priority of preference to receive information.

Also, the user or publisher can selectively lock choices or set-ups using a lock as shown in page printer box 156. The lock function inhibits users from changing the published set up. The lock feature can be any hard or soft button or indicator to inhibit alteration of a specified mode or device. In other words, both a check box and a lock identify receiver preference, where the lock disables the ability of the sender to deviate from the published receiver profile. For example, users sending documents may desire changing the preferred printer, if unlocked, to enable color printing rather than black and white printing..

Each profile property 153 is further selectable through each box category as indicated above. For example, the page printer selection window 159 shown in Figure 5 depicts how users change the setup of a particular category. Page printer window 159 opens as a result of double clicking on the page printer button 156. Once the user, Fred Smith, has selected a preferred page printer by filling out the appropriate categories in window 159 including a privacy button P as shown, the user can either apply these selections or cancel them by selecting "Cancel." or "Close" on the herald bar of window 159. The profile properties 153, however, are not limited to those shown in user profile 150. Any preferred form of receipt may be entered as a property in profile 150, some examples include a video conferencing center and a voice mailbox.

The sequence of steps for publishing the user profile 150 (shown in Figures 4 and 5) with network administration 47 is depicted in Figure 6. In box 160, the user opens the user profile by invoking the "open user profile" command (not shown) in the network administration menu 47 In box 161, manager 110 (Figure 3) is activated with receipt of the open channel profile command identified as "Open Channel Profile" in Appendix A. To return the user profile, manager 110 queries channel profile database 112 for the logged on user's current profile. Alternatively, if the user profile is not available from local DB 112, the admin server 105 is queried. Once the profile is returned to UI 111, the user can invoke any profile property displayed on profile 150. In box 162, the UI 111 dispatches any commands received from open profile 150.

At box 163, a profile property 153 has been selected. If the property is determined not to be complex at box 164, the property specifications are displayed, at box 165, as shown for example in Figure 5 for the page printer selection window 159. If the property is complex, then as illustrated at box 178, additional lists or sub properties are accessed for display as further described below with respect to figure 8. At any time after changing or simply viewing a profile property, a determination is made at UI 111 if any changes

required at box 166 should be recorded. At box 167, profile changes that have been enumerated are recorded by manager 110. In both cases, (whether or not the profile property specifications have been modified) the control returns to box 162 where subsequent commands from profile 150 can be dispatched.

After making profile changes or simply after opening profile 150, at box 168, the profile can be published, either to network admin server 105 at box 169 or to groups or individuals identifiable by network 24 at box 170. If groups or recipients have been identified, their identity is verified at box 171. Subsequently, at box 175, the user profile is published to the network or to an individual or groups of individual network users. However, before publication, elements in the profile 150 are updated in local database 112, if they have been modified, in order that local and published profiles remain consistent. This is shown at box 172 determining if there are modified profiles or properties and updating the modified profiles in local data base 112 as shown in box 174. After publication, profile 150 is closed as shown at box 176, followed by waiting for the next user command at box 177. (If no publication is required, the user can select the close command in the herald of profile 150.)

From profile 150, receive priorities 154 can be selected to open receive priorities window shown in Figure 7 to select additional priorities for receipt of information based upon factors such as the identity or status of the sender. Direct access priorities 181 and delayed access priorities 182 establish the access control of a user's communication channel 63. In this case, priorities established by a user determine wh re information is to be received and what level of priority should be given to that information. Priorities 154 sorts network users into multiple directories such as directories 181 and 182. Direct access places received information or data into a preferred location such as directly into the receiver's electronic mailbox whereas delayed access places received data in a remote or less accessible location. Delayed access group 182 is a directory of network users (e.g., a network directory). This directory is updated by manager 110 by querying admin server 105. The user can move individuals from one directory to another simply by selecting the individual and moving its iconic representation to an alternate directory.

Additionally, access properties can be retrieved from any network supporting an admin server 105 by identifying the path 183 of the network. Access properties can be modified individually for each user listed in directories 181 and 182, as shown, for example, for user Marri Flaherty in Figure 8. The sequence of steps required to establish channel access for different users is shown in Figure 6. At box 164, receive priorities 154 has been selected. Since only necessary information is maintained locally to system 102, re-

mote admin server 105 is queried at box 178. Displayed access properties 182 can be altered to the preference of the user. For example, the access rights property 186 specifies whether a sender's information is sent to a printer, to a queue or to a desktop. For instance, a receiver may provide an individual with "interrupt at desktop" privileges and another with a "reject" or busy return message. Priority property 187 ranks users as to their interrupt priority. Formatting property 188 provides the receiver with the ability to keep the senders finishing options (e.g. job ticket information). For example, a document sent may specify staple or bind for output specifications. Using formatting property 188, a user can specify whether to ignore such document specifications.

To summarize, communication channel control includes channel profile publication, where a network user who is the receiver of a document has the capability to set forth either through publication to the network or in a more limited fashion to other network users (or groups of users through distribution lists) a profile describing the preferred form (facsimile, electronic mail, voice mail, hard copy, color or black, file server, etc.) and service (the specific printer, facsimile machine etc.) documents should take to be rendered. Thus, individuals always wanting their documents printed on a color printer can specify the printer and the appropriate format that document should take. As a result, users are provided with an ability to establish consistency in the form with which documents are to be received by each user on a network using a universal method (i.e. method which is easily accessible to everyone on the network).

To operate a communication channel such as channel 63, select a document from document source 45 (e.g. report 34) and move it to communication channel 63 as shown in Figure 9. Job status window 195 shown in Figure 10 subsequently displays the document send progress. When sending a document through a communication channel without modifying its properties as shown in Figure 11, the channel takes on properties published by the receiver. Profile properties window 196, open by a user sending information, displays properties of the channel device from the receiver's channel profile. In the example shown in Figure 11, Debbie Cahn's communication channel allows the sender of information to select a document's disposition from either fax, page printer, color printer, or electronic mail. This option is enabled by the receiver at the time of channel publication. For example, this channel could have been forwarded to the current document sender by Debbie Cahn in order that this individual have adequate flexibility to send information. In this example, if the sender using system 4 had sent report 34 to Debbie Cahn without accessing Debbie's profile 196, Debbie would have received report 34 over her Fax line (123-888-3456) since her Fax line is prioritized highest of the selected

(checked) profile properties. It should be noted that it is well within the scope of the present invention to provide many alternate modes of identifying, listing, and accessing options, priorities, and defaults with respect to a receiver profile and making such options and priorities selectively accessible to potential individual senders as well as groups and categories of senders.

Communication channels enable the recipients of documents in a network multimedia environment to define the form with which the document should take upon receipt. Initially, channel profiles are published to a defined network audience to establish a communication channel defined by the published profile. This enables a sender to distribute documents with a prior knowledge of the preferred disposition a document should have. An advantage derived from a receiver driven document distribution system is that information takes the form most desired by the document recipient. Communication channels help make systems more productive by enabling information receivers to have information in their desired format so that it does not need to be converted from multiple sender formats.

Claims

1. An electronic workstation adapted for interconnection to a number of predetermined devices, the workstation having a user interface for operating the workstation and providing access to a communication channel profile defining a priority scheme for transmitting data to said predetermined devices, the user interface comprising:

    a screen display adapted for displaying icons and menu options, predetermined icons identifying data files,

    a graphic pointer electrically connected to the screen display for selecting icons and menu options,

    means to identify a given data file on the screen display by the graphic pointer,

    means to specify a destination for said given data file, and

    means to access said communication channel profile for transmitting said given data file to a given device in response to said priority scheme.

2. The device of claim 1 including means for altering the priority scheme.

3. The device of claim 1 or claim 2 including means for preventing the altering of the priority scheme.

4. A user interface for operating a workstation and communicating with a plurality of remote ad-

dresses comprising:

    a screen display adapted for displaying icons and menu options, predetermined icons identifying data files,

    a graphic pointer electrically connected to the screen display for selecting icons and menu options,

    means to identify a data file on the screen display by the graphic pointer,

    means to specify a remote address for said data file, and

    means to access a remote address profile for transmitting said data file to said remote address, said remote address profile defining a priority scheme for transmitting data to remote addresses.

5. The user interface of claim 4 wherein the priority scheme is responsive to the type of data file.

6. A user interface for operating a workstation and communicating with a plurality of remote addresses comprising:

    a screen display adapted for displaying icons and menu options, predetermined icons identifying data files,

    a graphic pointer electrically connected to the screen display for selecting icons and menu options,

    means to identify a data file on the screen display by selecting the data file icon with the graphic pointer,

    means to access a file of remote addresses by selecting the file of remote addresses with the graphic pointer,

    means to specify a remote address for said data file, and

    means to send said data file to the remote address by moving the data file on the screen to the remote address displayed on the screen including means to automatically access a remote address profile for transmitting said data file to said remote address, said remote address profile defining a predetermined priority scheme for transmitting data to remote addresses.

7. A method of operating an interface of an electronic device for communicating with a plurality of users over a network, the network including user profiles defining priority schemes for said users for receiving data, the interface including a screen, comprising the steps of:

    selecting a data object at the interface screen for transmission to a user;

    identifying a given user to receive the data object,

    accessing the user profile defining the priority scheme for receiving data for said given

us r, and

sending the data object to the given user in response to the user profile of the given user in order that the data object is received in accordance with the priority scheme for the given user.

8. A user interface for communicating information between senders and receivers over a network having a plurality of communication channels, the network including a communication channel profile to define preferences of data receipt for receivers over the network, the communication channel profile being available in a network repository, a method of sending information to a se- l cted receiver comprising the steps of:

selecting information at the user interface for sending to a given receiver;

automatically querying the network repository for the communication channel profile of the given receiver; and

sending said information to the given receiver over a first communication channel in response to a first preference of data receipt in the communication channel profile of the given receiver.

9. A user interface for communicating information between senders and receivers over a network having a plurality of communication channels, the network including a communication channel profile, the communication channel profile defining a priority of communication channels for data receipt comprising:

means for selecting information at the user interface for transmission to the given receiver;

means for automatically accessing the communication channel profile, and

means for sending said information to the given receiver over a given communication channel as a function of the communication channel profile.

10. A user interface interconnected to a network and communicating with a plurality of users interconnected to the network comprising:

a screen display adapted for displaying windows. icons and menu options, predetermined icons identifying data files,

means electrically connected to the screen display for selecting icons and menu options.

means to specify a data file icon on the screen display.

a quick send directory, the quick send directory including identifiers for selected users, and

means for automatically transmitting a data file to one of the selected users by engaging

the data file icon with the identifier of said one of the selected users.
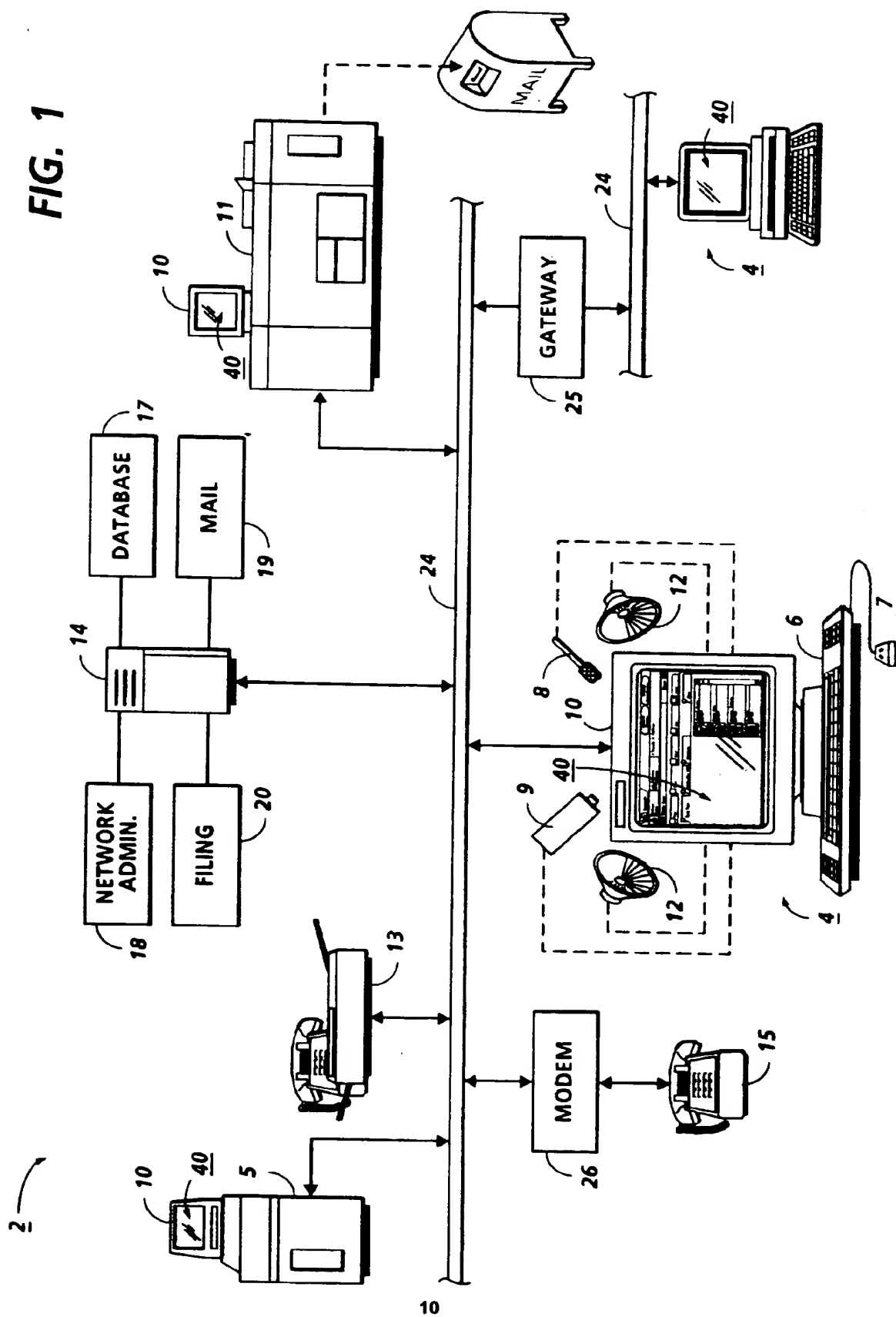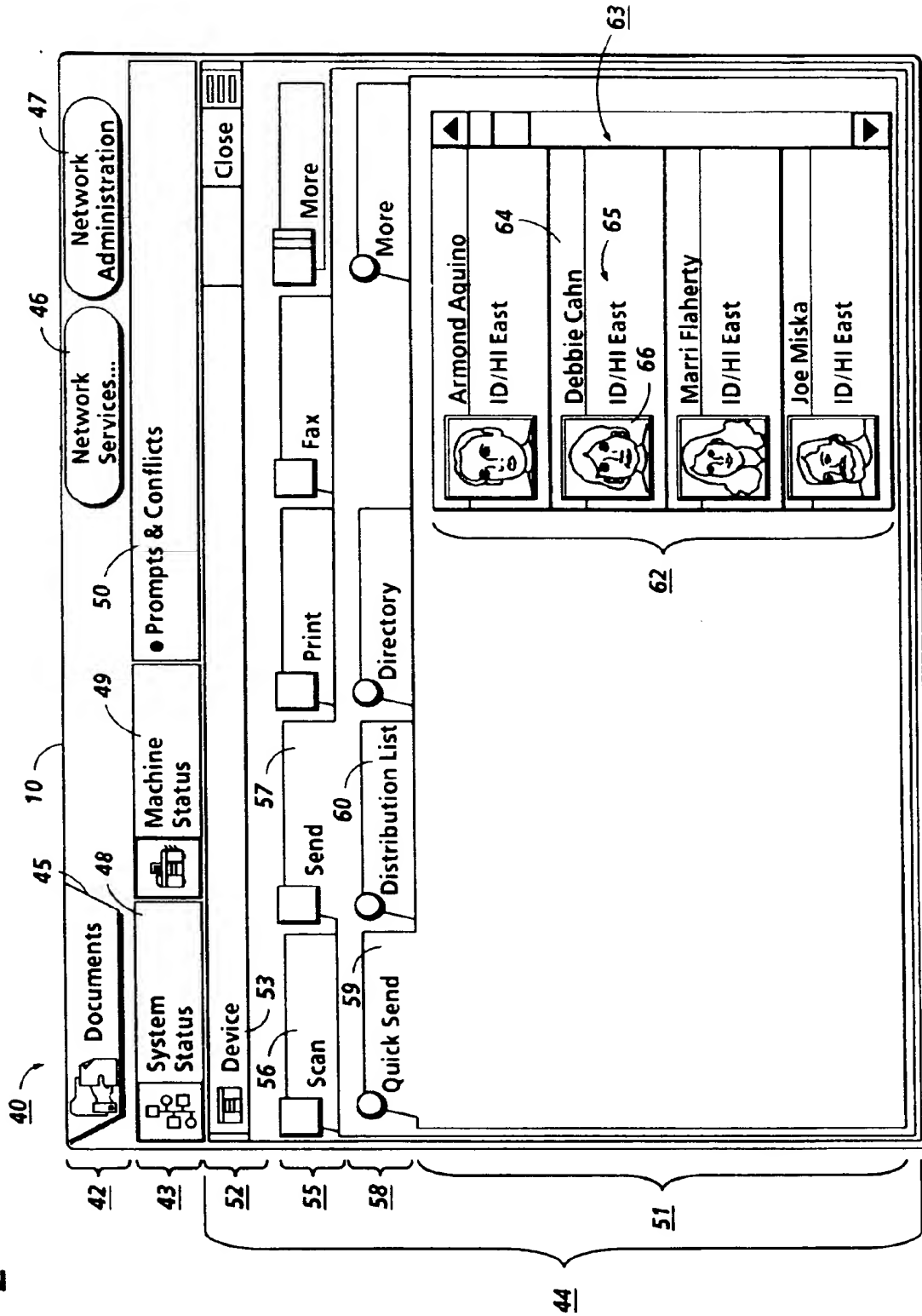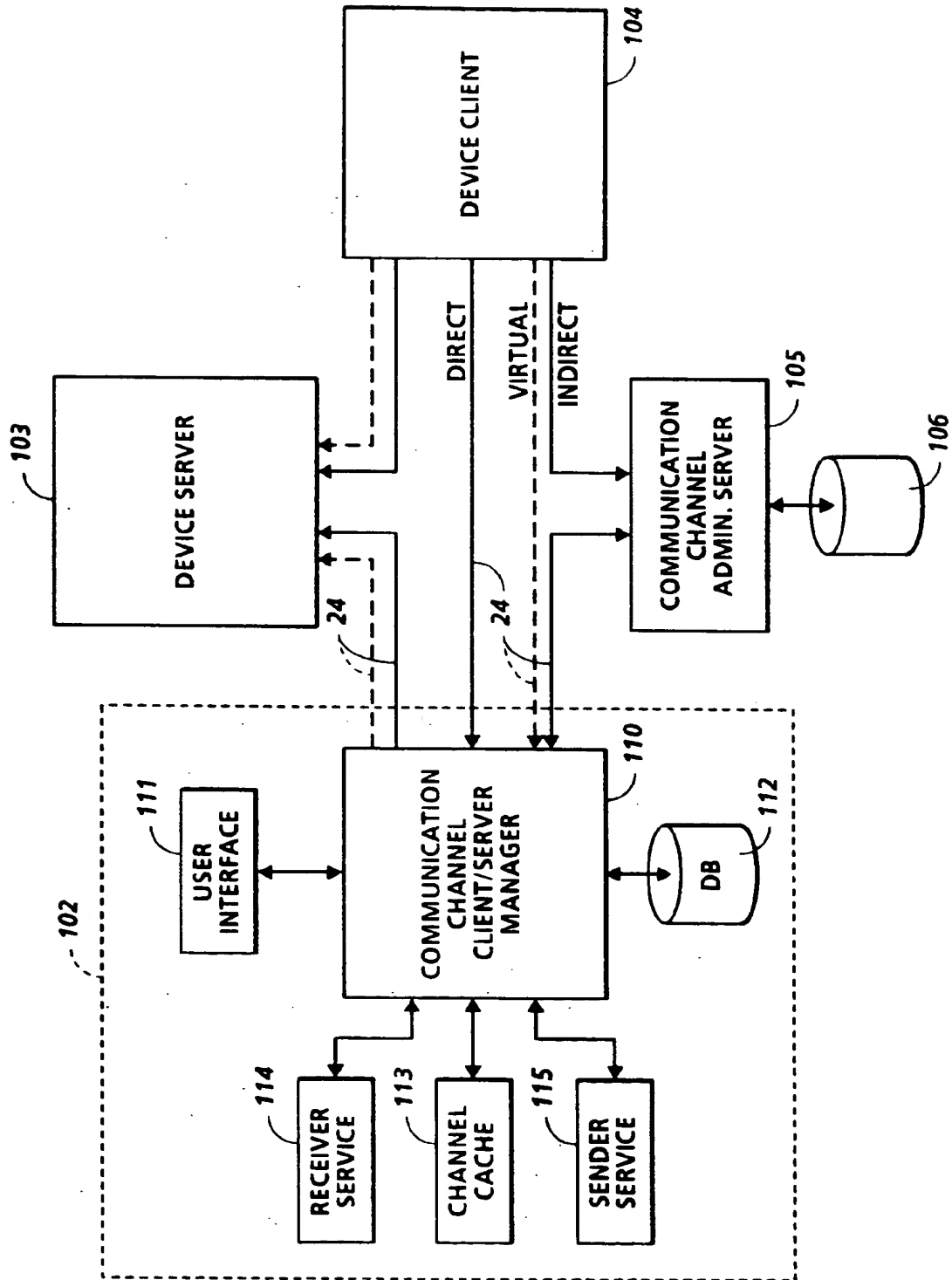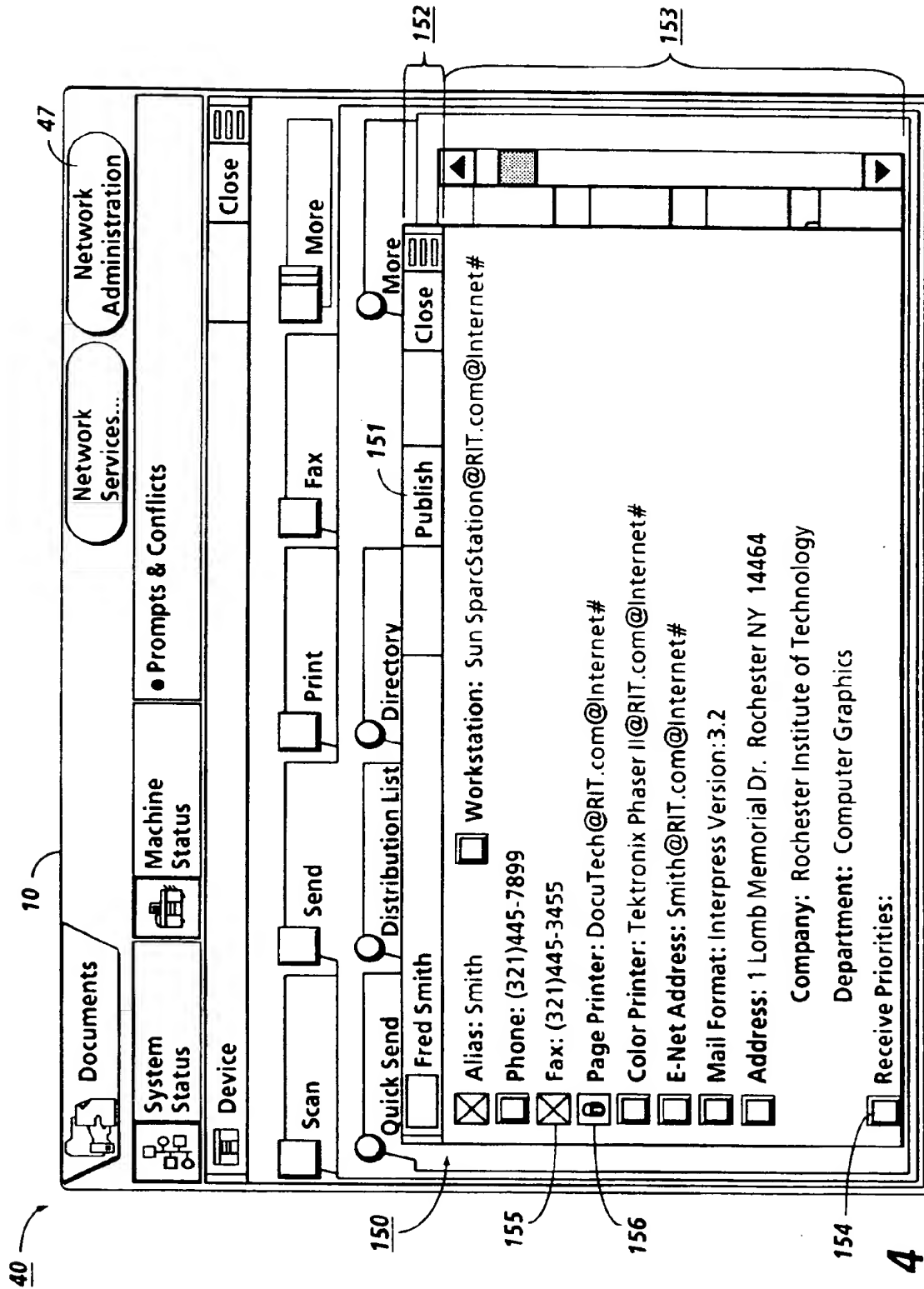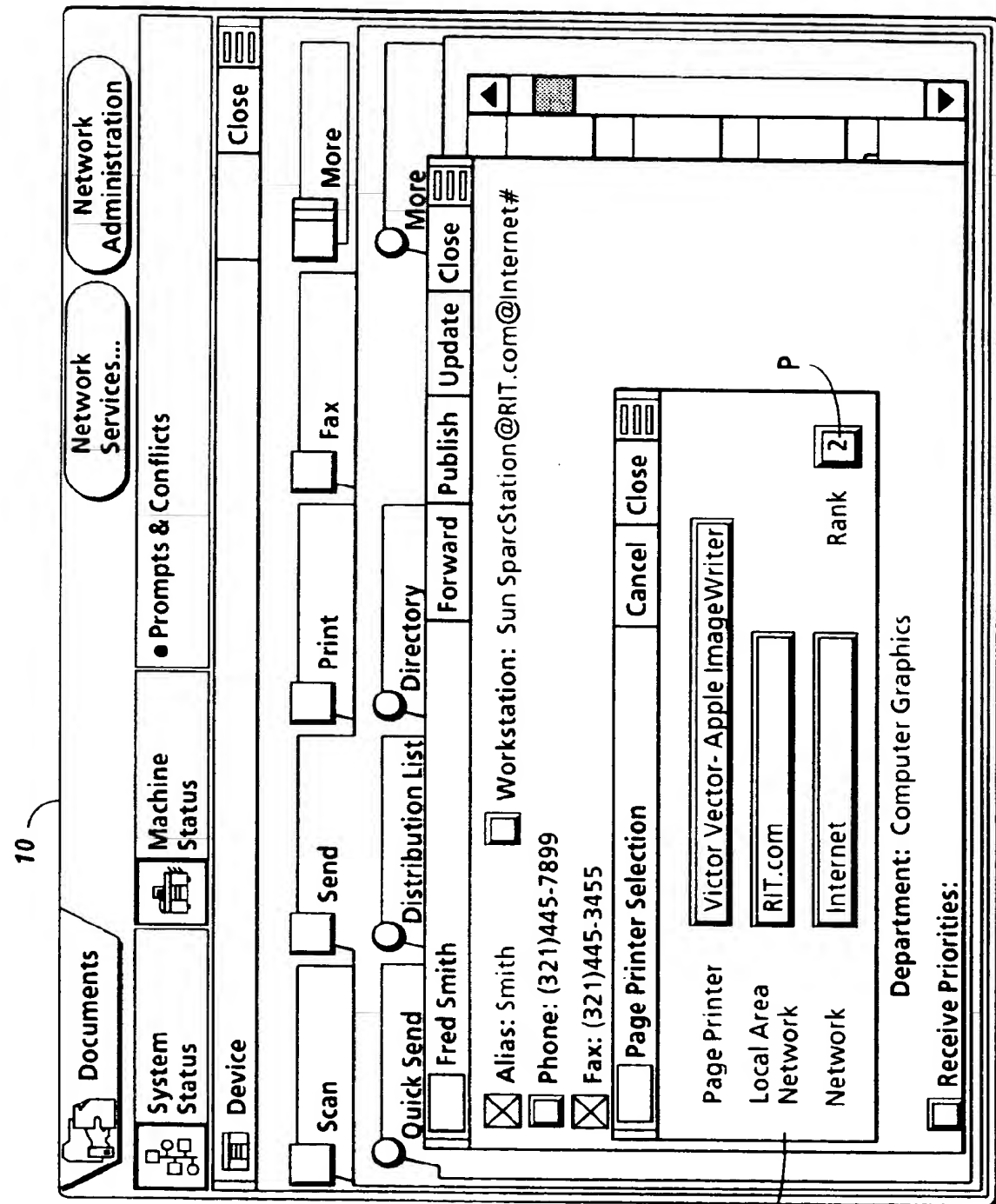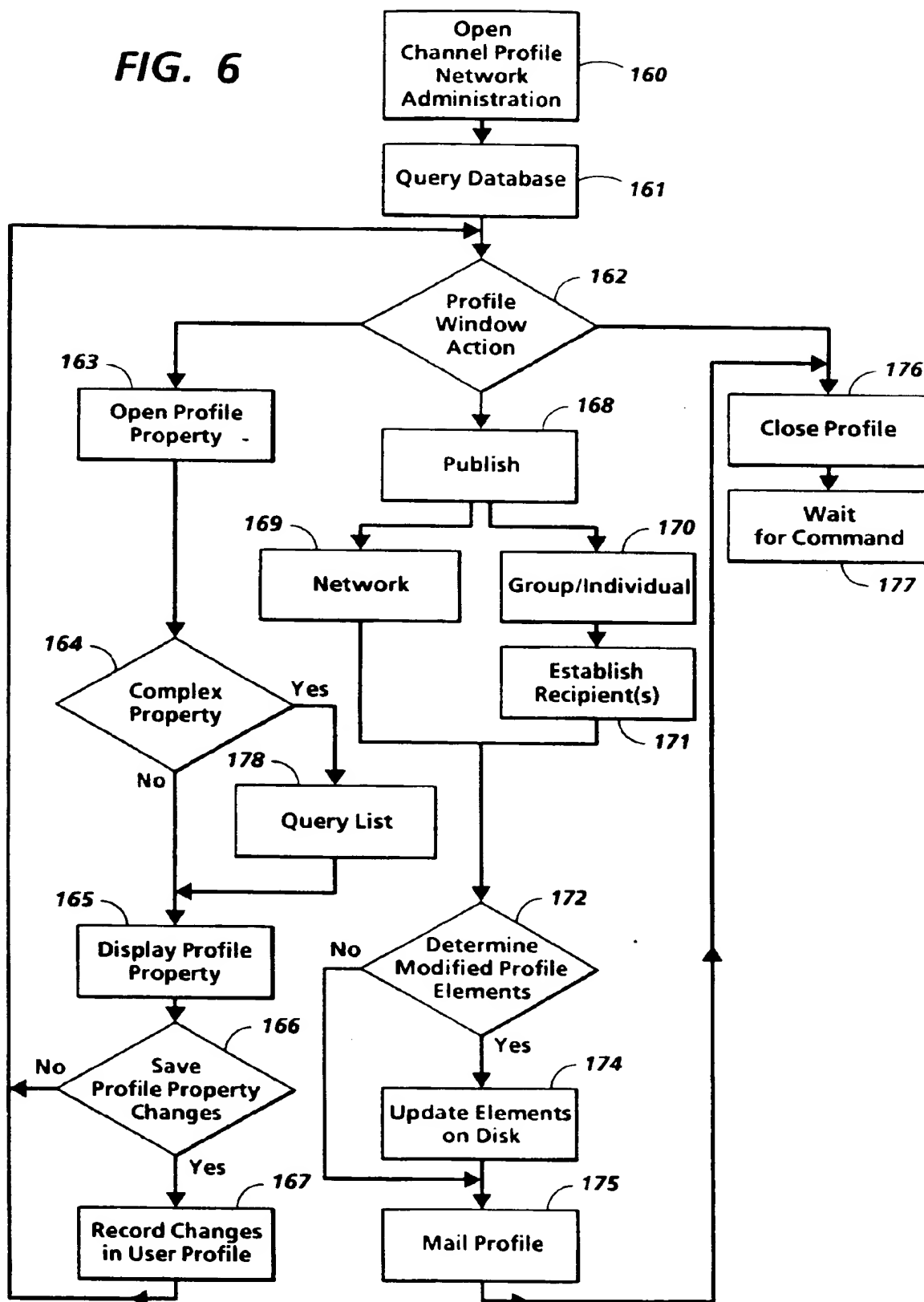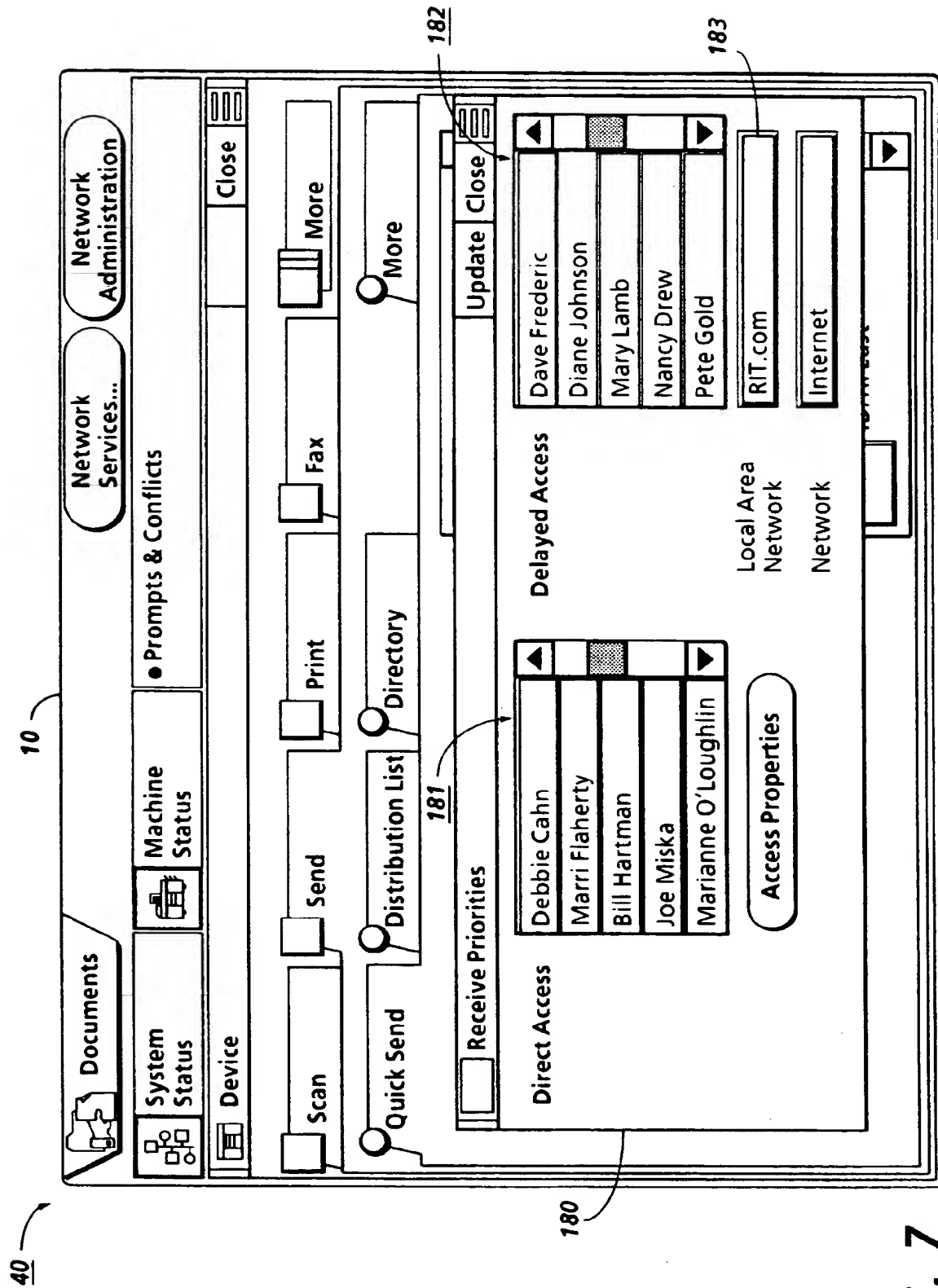
FIG. 1

FIG. 2

FIG. 3

FIG. 4

FIG. 5

FIG. 6

FIG. 7
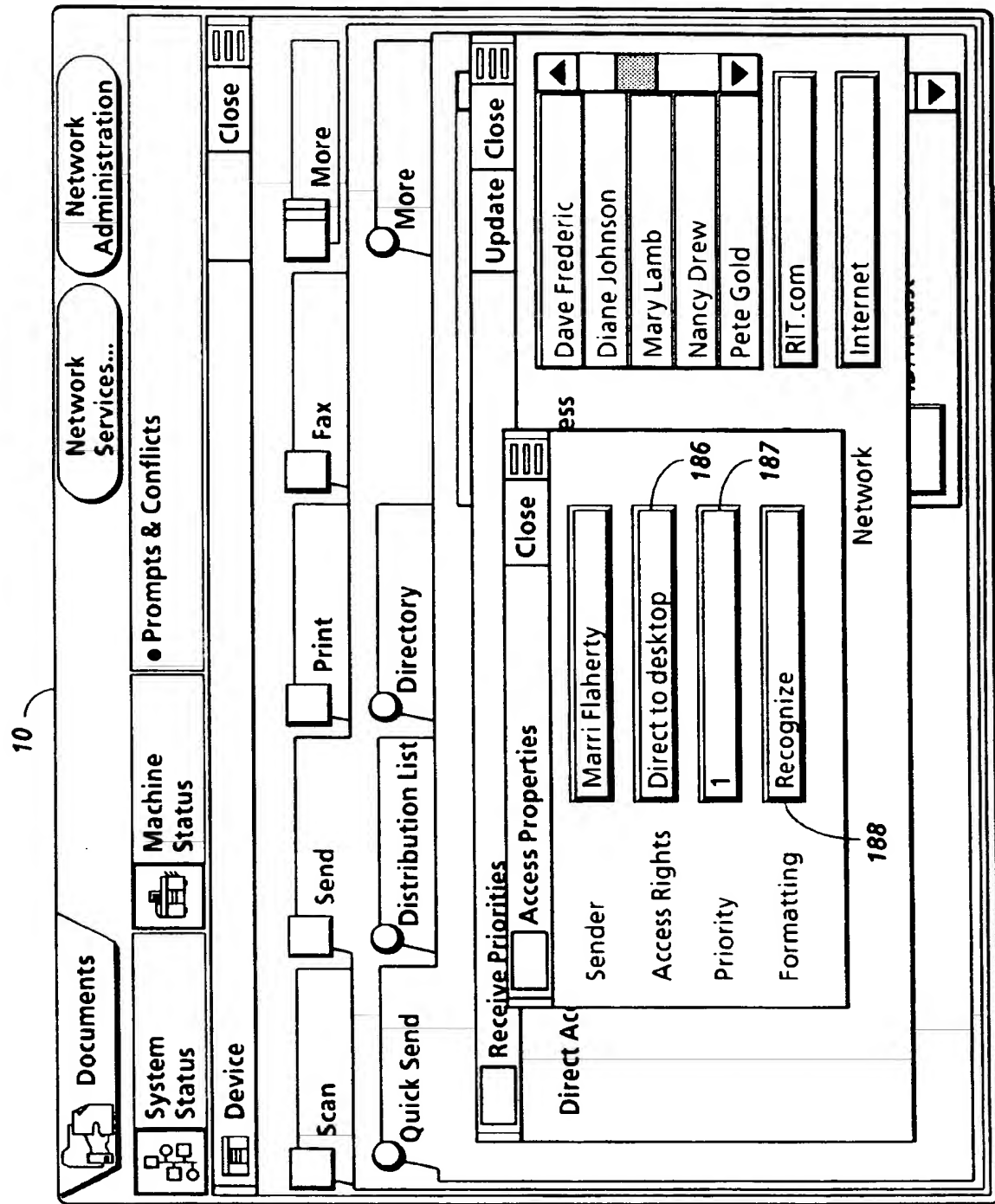
FIG. 8
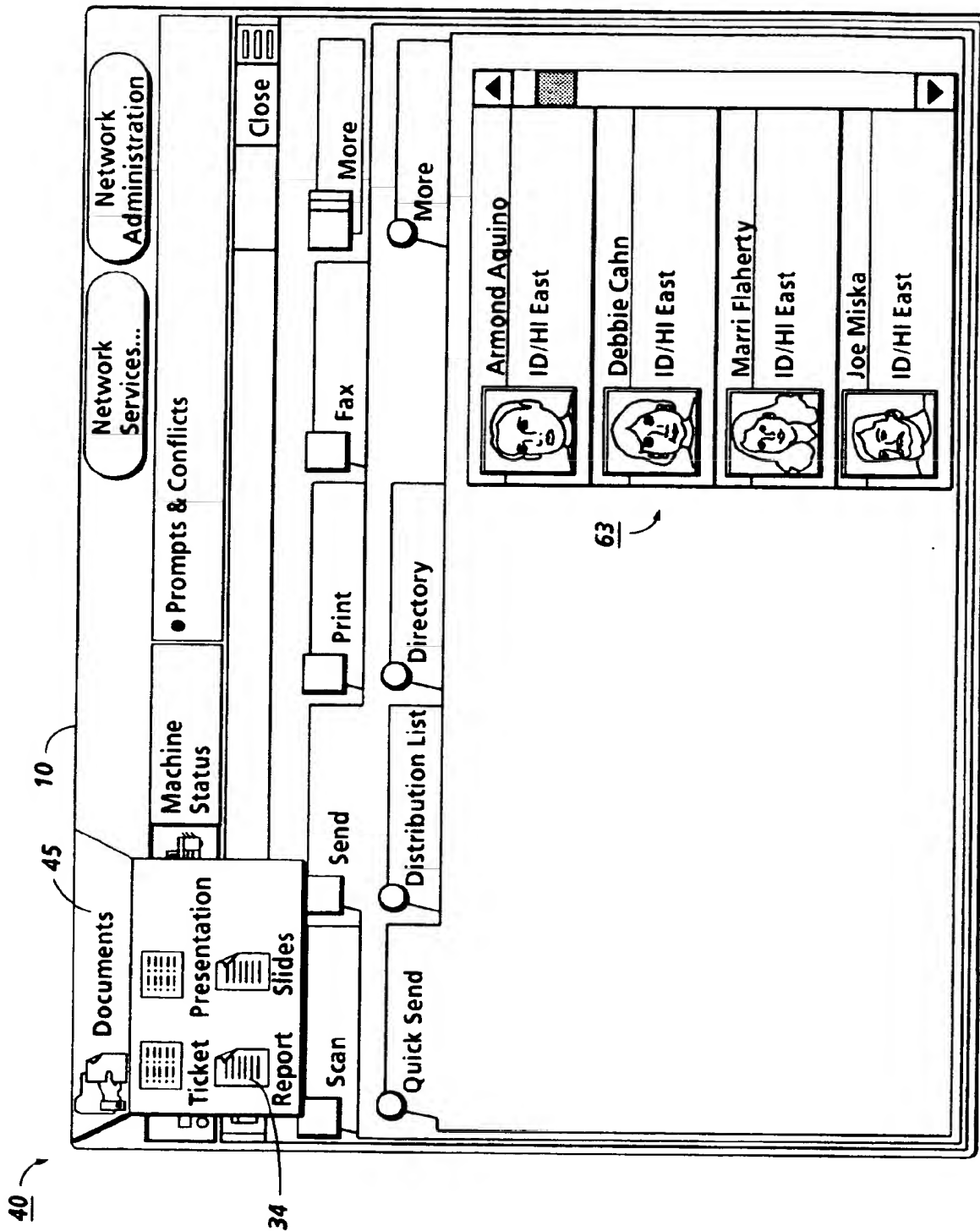
FIG. 9
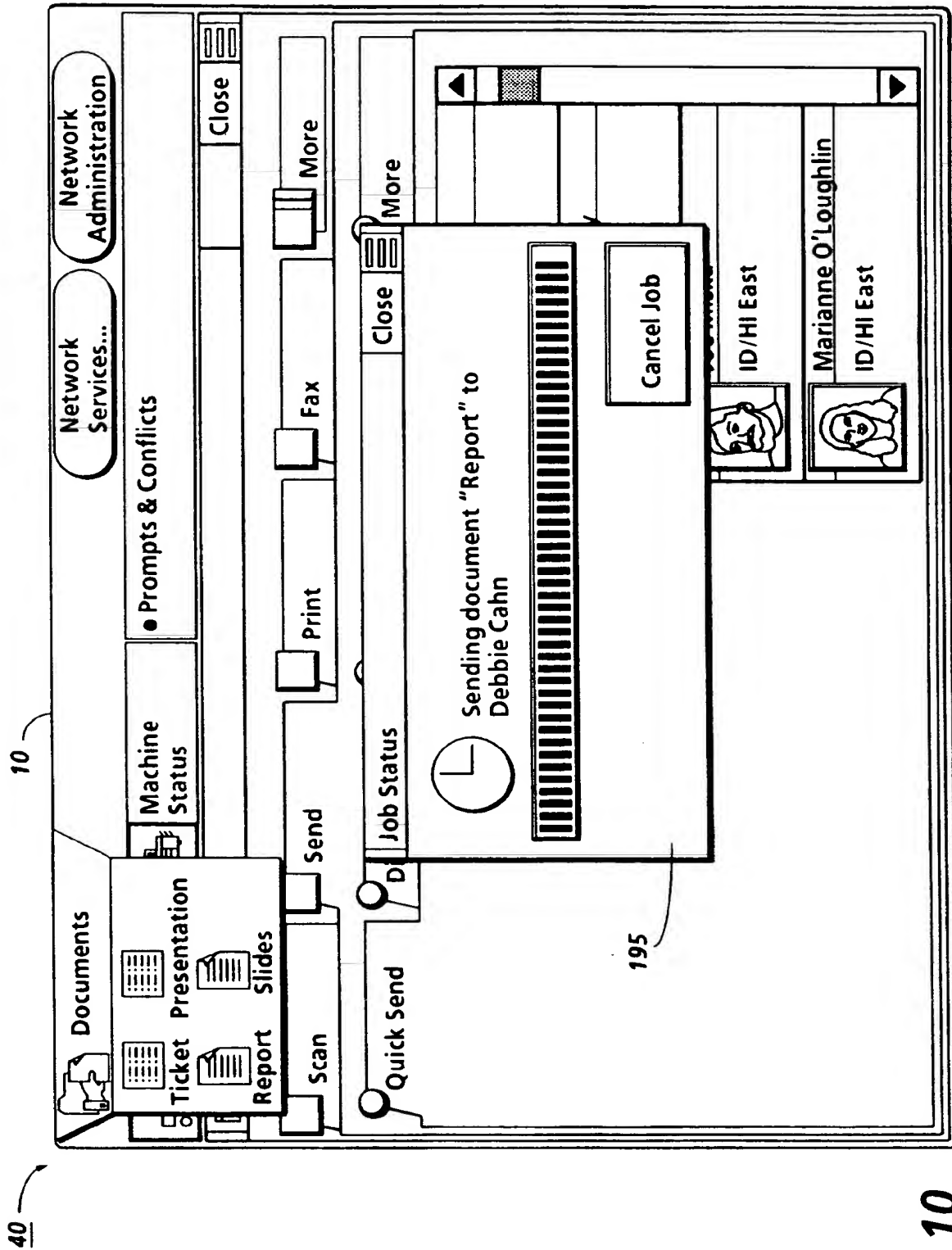
FIG. 10

FIG. 11

EUROPEAN SEARCH REPORT
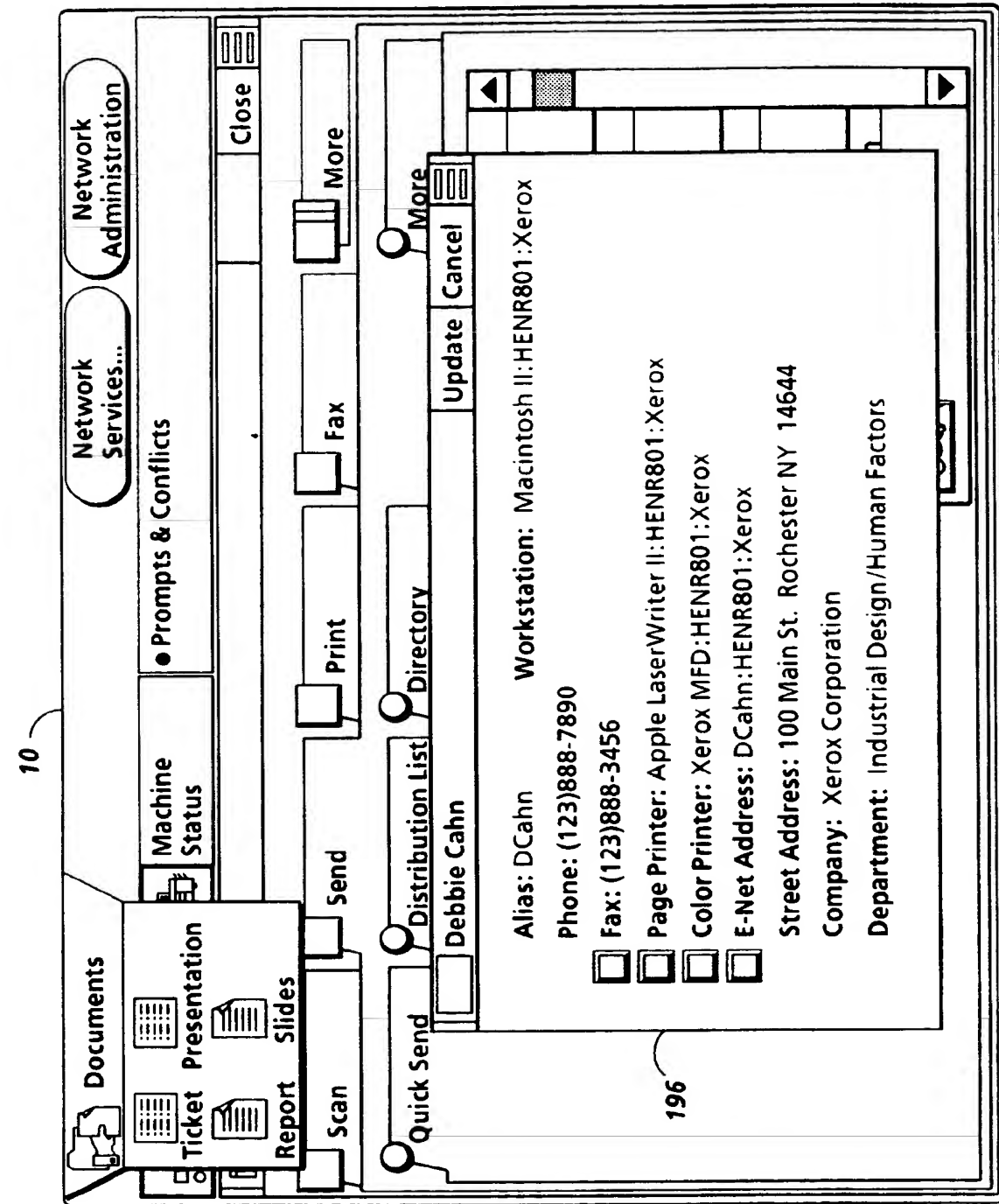
European Patent Office

Application Number

EP 94 30 7159

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	IBM TECHNICAL DISCLOSURE BULLETIN, vol.35, no.6, November 1992, NEW YORK, US pages 21 - 23 'Isosynchronous state-driven inbasket' * the whole document *	1-10	G06F3/033 G06F15/40
A,P	EP-A-0 581 591 (IBM CORPORATION) * abstract * * column 4, line 15 - column 6, line 8 *	1-10	
A	US-A-5 117 372 (PETTY) * column 1, line 41 - column 2, line 59 * * column 8, line 35 - line 51 *	1-10	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

G06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	27 January 1995	McDonagh, F

CATEGORY OF CITED DOCUMENTS

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